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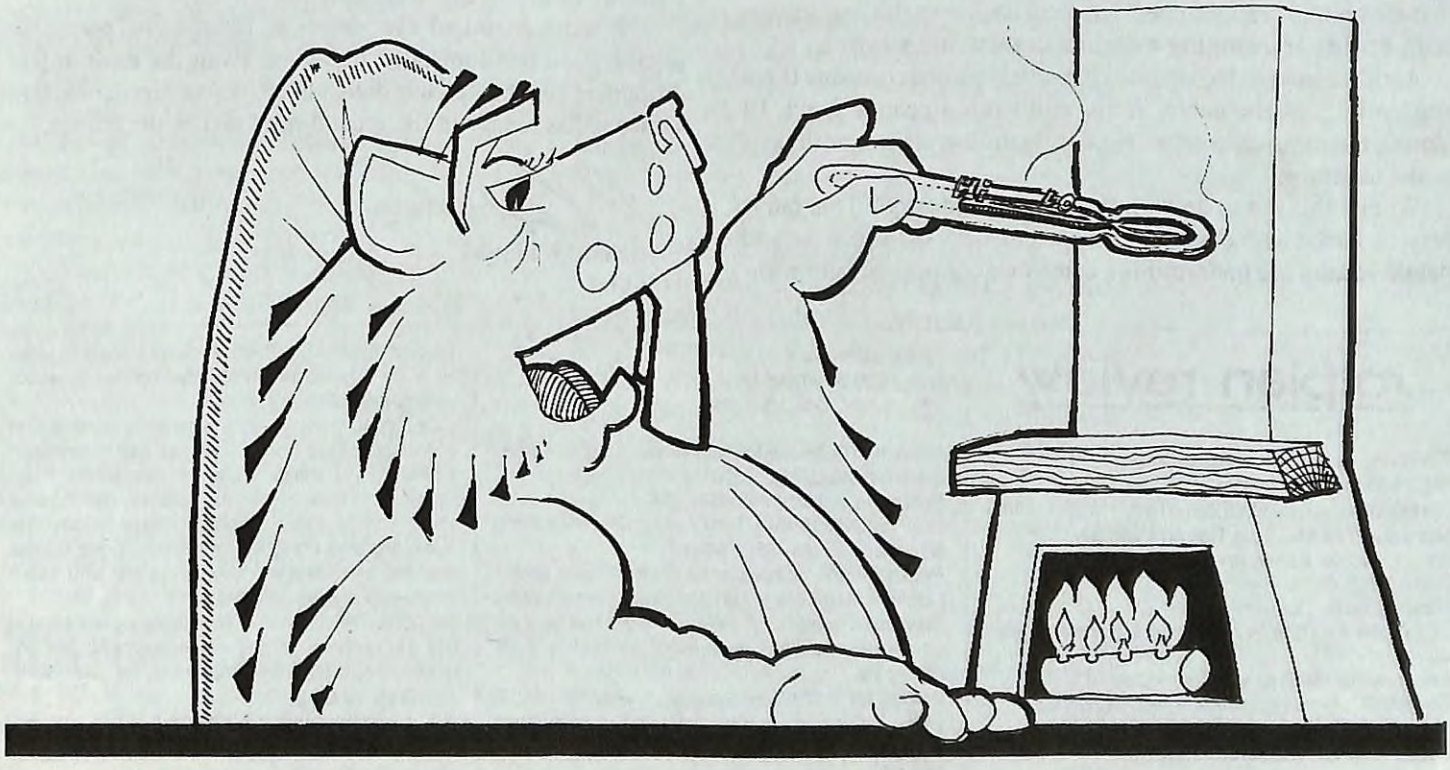

From the Editor . . .

We are a curious lot, always falling head over heels into fads - be they pet rocks, bell bottom pants, avocado appliances, Mexican foods, Cabbage Patch dolls, or whatever. Fads are everywhere and have been with us forever. Some are frivolous. Others are more substantial fashion statements. The housing industry is far from immune. In any community you can see the changing trends in housing over the past half century.

What is disturbing is that social and economic trends with serious consequences are also influenced by the fads. If we look back through history, many economic crises were created by fads that went wild. If people say something might happen, it can become a self fulfilling prophecy as others take action.

The latest disturbing fad among economists is the downsizing approach to business management. At every turn, one hears gurus proclaim the importance of downsizing to maintain global competition, etc. Never mind that an enterprise is a viable economic entity, makes money, employs people, provides a useful good or service; managers that don't downsize and lay off workers just don't get respect. The result? Uncertainty. People don't spend in fear of being the next to get the axe, and the economic insecurity gets magnified. It's no surprise that unemployment levels are as high as they are!

I still haven't heard a good explanation why a profitable enterprise, be it private or publicly owned, has to "restructure" (read lay off people, downsize) to continue in business. Of course it can't lose money, but many entities undergoing structural change are not losing money. How many suppliers you do know, in their rush to "rationalize," have cut back on sales and service staff, further accelerating a decline in sales and service?

Another current fad says that a publicly owned company is not appropriate, as the public sector can't run a peanut stand, let alone a business enterprise (but don't confuse anyone with facts to the contrary).

What's this got to do with the housing industry? This fad is playing havoc with our industry. The cutbacks in the private and public sectors are undermining consumer confidence, and without confidence, consumers won't spend for new houses or for renovations. Even that old robber baron, Henry Ford, realized that if people didn't have a job or money, they wouldn't buy his cars.

The downsizing fad has penetrated governments - and it knows no ideological barriers. In the public sector, the fad manifests itself through deregulation, as if deregulation will cure all problems. We've seen the Ontario Conservative government hack away at the public service and building regulations, even where they made sense. Now the BC government (the ideological opposite to Ontario) has jumped on the bandwagon with the recent announcement that the entire department in charge of building regulations is being closed down.

The closure of the Building Standards Branch in January means that no agency within BC will be responsible for building regulations - this includes code development, interpretations, appeals, etc. Without a central agency, every municipal building inspector will have his own fiefdom, and any pretence at a uniform province-wide code will be smoke and mirrors.

What is most disturbing is that the decision was made while the province is in the midst of a major safety systems review (brought about by a catastrophic failure several years ago). All building safety systems and regulatory structures are being examined. Thousands of hours of volunteer effort have been put into a thorough review of the roles and responsibilities of all players in the construction sector. One would assume that if changes have to be made, the results of the efforts of a public-private consultative process would be taken into account, rather than arbitrarily shutting down the office with no thought of how statutory functions are to be handled.

The move surprised everyone - so far not one person or organization has applauded the move. Even the most ardent proponents of a completely deregulated industry recognize that someone has to lay out the ground rules and be the referee.

Richard Kadulski,
Editor

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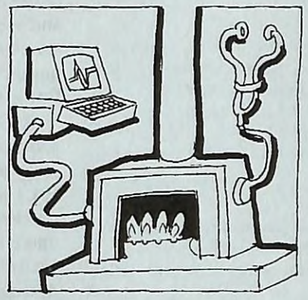
Fireplace Efficiency



Fireplaces As Heaters?

For the past 15 years or so we've been told that fireplaces are very inefficient and should be avoided. Yet the image of the fire in the hearth strikes a primitive instinct in everyone - it's still the exceptional house that doesn't have at least one fireplace. The recent development of gas fired fireplaces, especially direct vent units, have made fireplaces possible in multi-family projects, so now even most new apartments have a fireplace.

There is no doubt that the traditional uninsulated open masonry fireplace (especially on an outside wall) is an energy hog. It is also unsafe in our cold climate, as an uninsulated exterior flue will cool down quickly when the fire is dying down (at its most toxic stage) and the chimney loses its draft. At that stage, as the heavier cold air pours down the flue, the chimney will reverse itself and backdraft combustion gases generated by the smouldering fire.

Properly designed and installed masonry fireplaces such as the masonry stoves (also known as Russian or Finnish stoves) can burn efficiently and be a contributor to space heating, especially when they are located inside the house. However, these are not seen as often as the less efficient traditional fireplaces.

In the past 10 years, gas-fired fireplace units have gained considerable popularity. In the Vancouver area, which has been the North American market leader, wood burning fireplaces are the rare exception today in new housing.

Gas units have gained popularity because they are clean in their combustion and in operation (no wood to deal with, no ashes, no smoke, etc.) and very convenient to use - a flick of the switch and presto! - instant fire. Pyromaniacs and Boy Scouts are not needed as a perfect flame is achieved instantly every time. As direct vent units don't need flues, they don't require special foundations and construction, and can be located almost anywhere, even in high rise apartments.

While these units were initially designed as decorative units, it didn't take long before people realized that even decorative flames throw off heat. This led to the use of gas fireplaces as space heaters. Well-insulated energy efficient homes and apartments have small design heat loads, so that a fireplace can provide a significant portion of the heat requirement. When a unit is installed with a thermostat, as is being done in some installations, the space heating can be satisfied by the fireplace.

The increasing use of this heating approach, especially in Greater Vancouver and on Vancouver Island, has created pressure for rating units used for space heating. The energy efficiency regulations in BC already call for minimum efficiencies of heating appliances, but as there have been no standards for fireplaces, there has been some concern about how to treat them.

Natural gas has been available on Vancouver Island for only a few years. To encourage adoption of natural gas to reduce reliance on wood heating (common in many areas that are also subject to temperature inversions and smoke pollution), an incentive program, Clean Choice, has been put into place. To qualify for the incentives, appliances have to meet minimum standards. The provincial government pressed the industry by making the incentives available only for listed equipment. Right now, no minimum levels are specified, but acceptable units have to be tested and results have to be listed.

CGA P.4.1 Draft Test Standard

As there have been no standards for gas fireplace testing, the industry (through the Canadian Gas Association [CGA]) has prepared a draft test method (CGA P.4.1) for measuring annual fireplace efficiency. The issue is complicated by the fact that there are three types of appliances - each defined according to the safety standard to which they are tested:

- direct vent gas fireplaces
- wall furnaces
- room heaters

For purposes of CGA P.4.1, a vented gas fireplace is a "*vented appliance which allows the view of flames and provides the simulation of a solid*

fuel fireplace" regardless to which safety standard the product is tested. For the Clean Choice program in B.C., eligible fireplaces have to be tested to the draft version of CGA P.4.1 Wall furnaces and room heaters have to be tested to applicable standards. No minimum efficiency levels are required (for comparison, the minimum for gas furnaces is 78%).

As with any test method, there will always be some artificial conditions imposed, intended to make comparison of equipment possible. The CGA P.4.1 standard is still a draft, and there are still concerns. The main difficulty was how to define operating conditions for appliances that will be treated as a furnace, but in fact are designed to be decorative. For example, does one use the fire-on cycle periods one uses for a furnace, although the appliance may likely be on for longer periods? (Typically, a furnace is assumed to cycle on-off every so many minutes, while it is safe to assume that a fireplace may be left on for several hours). How does one take into account the thermal mass that some fireplaces incorporate through their design and construction (e.g., more or less firebrick lining, heavier gauge steel surrounds, more or less air spaces around the firebox, etc.)?

While the standard is still undergoing change, it is interesting to see the results of the initial tests. Efficiencies are lower than one would expect, and industry is scrambling to fine-tune equipment and to resolve concerns with the fundamental test procedures. The range is 43-73%, with most results in the 60-63% range. The following table lists the test results. It shows the performance range, using the present draft test standard. Because of space limitations, only the best unit for each manufacturer is listed.

The main concerns with the draft standard are how tests are taken. Testing for P.4.1 takes measurements at 4 points: 5 minutes and 10 minutes after turning on the burner, once steady state fire is achieved, and 20 minutes after the burner is turned off. These don't fully take into account the thermal mass that may be present in the fireplace, which will affect performance both as the unit is warming up and when it cools down.

Another concern is that standing pilot lights are penalized. Public agencies on the standards committee are saying, in effect, if you have a standing pilot light, gas is burning when it's not needed, so gas pilot light gas consumption (which can be significant over a full year) should be factored into the overall performance efficiency calculation. However, manufacturers claim that pilot lights are not as inefficient as claimed, and in fact the pilot light is relied on as a safety feature to avoid build up of potentially explosive gas concentrations. This is also a major difference with US Department of Energy (DOE) test standards that do not take into account pilot light gas consumption.

Other than the Clean Choice program on Vancouver Island, there is no move to mandate minimum standards for gas fireplaces, although BC and Nova Scotia have suggested that once the standard is finalized, they may implement these subject to giving industry notice. Ontario does not plan to implement minimum efficiency levels beyond those within P.4.1

Building Research Priorities

Just because we understand building science principles, materials performance, and how building systems work does not mean more research. is not needed. (Although listening to many today, one would think otherwise).

So what should be the priorities for building research? The Swedish have identified three main areas for building research: sick buildings, cost-effective construction, and buildings designed for recycling.

Sick buildings are a growing concern recently identified. Research is needed to find solutions for current problems and ways to avoid them in the future.

Cost-effectiveness in building and building management should be further developed. New cost-effective materials, techniques and construction methods have to be developed to keep costs in check without adding a penalty in cost or resources.

Flexibility of building design is also important. At different times of one's life, space needs vary. Changing homes is one option. Another is having the ability to adapt homes for changing lifestyles. In the future, people will have increasingly more variable housing demands as they change jobs more frequently or work out of homes more often. Buildings designed for recycling of products and spaces cannot only save natural resources.

MANUFACTURER	TRADE NAME	NUMBER MODELS TESTED	MODEL	FIREPLACE EFFICIENCY (%)
APR Industries Ltd., Winnipeg MB	Kozi	1	DV1	56.5
Archgard Industries Ltd., Mission BC	Archgard	4	Marquis 400	50.5
Canadian Heating Prod. Inc., Surrey BC	Montigo	2	W 34 DV TV	63.7
Emberline Industries Ltd., Port Coquitlam,BC	Emberfire	1	Elation	53.6
Fire Hearth Mfg. Ltd., Burnaby BC	Firehearth	1	620-IN	55.6
Fireplace Mfg. Inc., Santa Ana CA	Executive	4	DVF 40	57.1
Fireplace Products Int., Delta BC	Lennox	3	GFP 7	63
Gas Equipment Supplies, Port Coquitlam BC	Builder's Choice	1	GES23-N	56.8
GSW Heating Products Co., Stoney Creek ON	Vesta	1	FDV-4100	63.4
Harman Stove Co., Halifax PA		2	Clarity 929DV	66.1
Haughs Products Inc., Brampton ON	Haughs	1	G 600N	57.3
Heat-N-Glo Fireplace, Savage MN		12	R5500RH	70.8
Heatilator Inc., Mt. Pleasant IA		12	DV750L	73.2
Hepworth Heating Ltd., Derbyshire UK	Gloworm	1	Opus - Opulence, Victoria	60.7
Hunter Energy, Orrilia ON	Hunter	3	HFS 40	68.5
Johnson Gas Appliance Co., Cedar Rapids IA	Johnson Gas	1	DVI-30	55.5
Kingsman Ind., Winnipeg MB	Kingsman	7	ZDV 1001-T	63.4
Lennox Industries Inc., Richardson TX	Lennox	5	GFP1-(1,2,3)	63.6
NHC Inc., Morrisville VT		1	Sterling B-vent	61.6
Oliver MacLeod Inc., Whitby, ON	Oliver MacLeod	1	DV 77N	58.6
Osburn Mfg. Inc., Victoria BC	Osburn	9	G2D	73.3
Pacific Energy Gas Stove, Duncan BC	Pacific Energy	4	Estate, Ser A	68.5
Polaris Fireplaces Inc, Oakville ON		2	Phoenix XL	61.3
Regency Industries Inc., Delta BC		7	Ultimate U41	62.1
Security Chimneys Ltd., Laval PQ	Security	1	PDV 33N	58.6
Selkirk Metalbestos NA, Carrollton TX		2	SB,BW I-30	49.7
Sherwood Ind. Inc, Saanichton BC	Envirogas	6	828 FS DV	63
Superior Fireplace Co., Fullerton CA		1	UVI-3821N	45.5
CFM Majestic Prod. Co., Mississauga ON		29	Majestic HEDV32	64.7
Valley Comfort System Inc., Penticton BC	BKI	3	9603 (rear exit)	72
Valor Heating, Birmingham UK	Valor	7	492 CN	63.7
Vermont Casting Inc., Bethel VT		4	Wonderfire 25	74
Waterford Irish Stoves Inc., West Lebanon NH		3	Emerald DV	70.1
Wolf Steel Ltd., Barrie ON	Napoleon	9	GDS50-N	70

Fireplace Efficiency Ratings according the CGA P.4.1 Draft Test Method

The most efficient unit for each manufacturer is listed. Of all units tested, the lowest rating is 30.9%, the highest is 74%. Most units are in the 60-63% range.

Because of space limitations, only the best unit for each manufacturer is listed.

Paints and Coatings for Wood

A wide selection of liquid finishes are used to increase the durability and maintain the appearance of wood. The choice at times can seem overwhelming. Terminology applied inconsistently between manufacturers adds needlessly to the confusion.

The most commonly used coatings are paint, varnish, stain and lacquer.

All coatings have three general components:

- *a solvent to thin the pigment/resin mixture to enable its application*
- *a pigment to provide the colour and hiding ability.*
- *a resin to give it the physical properties such as durability and adhesion.*

Paint is a coating that provides a solid colour. It is a liquid coating that undergoes a chemical reaction to form a solid film as it cures. Most paints applied to wood products use alkyd or latex as their principal resin ingredient. Some paints also contain preservatives.

The suitability of a paint for exterior or interior application is determined by the chemical composition of the resin. Resin for exterior paint provides the flexibility to accommodate temperature and dimensional changes in the wood, and permeability to allow the movement of water without blistering the paint.

Varnish is a clear coating used as a topcoat over natural or stained wood, usually for interior applications. Most varnishes contain a resin combining alkyd with polyurethane. They have recently become available as a water-based product.

Varnish is like paint but, because it is used as a clear finish, it lacks a hiding pigment, but a pigment may be used to establish the desired gloss level.

Stains are coatings with a high solvent content that enables the stain to be absorbed into the wood cells. Although some stains penetrate to the extent that they leave no surface residue, most leave some surface coating. Stains are specially formulated to meet the specific requirements of exterior, interior, general purpose and interior fine finish applications.

For exterior applications, stain is usually used alone but may sometimes be top coated with exterior quality varnish. When used alone, stain is used to alter the colour of the wood and to provide protection from sun and water.

Lacquers are fast drying topcoats used for fine finishing and furniture.

All coatings have three general components:

- a solvent to thin the pigment/resin mixture to enable its application
- a pigment to provide the colour and hiding ability.
- a resin to give it the physical properties such as durability and adhesion.

The proportion of solvent/resin/pigment and the chemical composition vary with the type of product and its end use. In some clear finish products, pigment may be specialized or may be absent altogether.

Most coatings used today can be categorized as having either an alkyd or latex resin base. Alkyd are the oil-based coatings. These still represent 40% of total market, but this is fast changing. Latex finishes are water based. As they dry, the resins coalesce to form a film that covers the painted surface.

Solvent

The solvent is used to thin the pigment/resin mixture to make it easy to apply. During drying, the solvent evaporates and has no effect on the physical properties of the cured paint film.

Water and mineral spirits are the main types of solvent in the majority of coatings used for wood products. Water is more environmentally benign than mineral spirit solvent. More water solvent products, including paint, varnish, stain and even lacquer, are becoming available.

Pigment

The main purpose of pigment is to provide colour and hiding ability. Some pigments are used to make sanding easier, to control gloss level, or to act as a filler. Pigmented coatings also resist ultra-violet light penetration and last longer than unpigmented coatings.

Resin

The type of resin used gives the coating product most of its physical characteristics such as adhesion and durability. Resin is the ingredient that forms the film and binds the pigment particles together after the paint has dried. The type of resin used is what gives the product its name: alkyd, latex and polyurethane are the most frequently used resins.

As the resin content increases, the gloss and durability increase, but the ability of the coating to conceal imperfections decreases. So, a low pigment to resin content coating would be wanted where much wear is anticipated, and a high ratio of pigment to resin latex coating is called for where it is necessary to mask flaws in the prepared surface.

Gloss is the ability of a coating to reflect light. Generally, the higher the gloss of a paint coating, the more washable and wear-resistant it is. Gloss levels reflect the resin content. The higher the resin content, the higher the gloss and the more durable it is.

Eggshell finish has a similar sheen to eggshell, mid way between a high gloss and low gloss.

Low gloss paint has more pigment, less resin and also less strength. This means the wood will also be able to absorb more water.

Alkyd Coatings

Alkyd resins or so-called oil resins are used for the manufacture of general purpose paint, varnish, and stain. Early oil paints used linseed oil as the resin and mineral spirits as the solvent. As a result, they were soft and slow drying.

Oil paint was then developed which used alkyd blended with linseed oil as the resin. Today alkyd formulations dry faster, have better durability compared with early oil paints, and retain most of the flexibility of the softer early oil paints. Polyurethane resins may also be blended with alkyd to produce polyurethane paints, or polyurethane alone may be used as the resin.

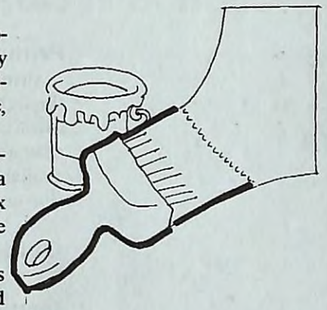
Latex Coatings

Latex formulations contain latex as the resin, water as the solvent, and pigments, such as titanium dioxide, extender pigments, and colour pigments similar to those found in alkyd paints. Latex resin consists of small spheres of plastic material suspended in the water solvent. As the paint dries, the spheres coalesce to form a film that covers the painted surface.

Temperature

Latex resin becomes hard when cooled, so for proper application and initial cure a minimum temperature of 10°C (50°F) for at least 2 hours is essential to the formation of a strong film.

Exterior and interior latex coatings differ in the type of latex used for resin. Acrylic latex is the most used resin for exterior products. More economical latex resin called PVA is commonly used for interior applications. For high quality interior paint a blend of PVA and acrylic, or straight acrylic, is used.



Most alkyd paints contain some vegetable oils, such as linseed oil, that have a tendency to yellow over time. Because latex coatings do not contain any oil, they have better gloss and colour retention.

Latex coatings dry faster and give off less noxious odour than alkyd coatings, and cleanup is done with water rather than the spirit or oil-based solvents used with alkyd paints.

Acrylic latex paints have better gloss and colour retention than alkyd paints. Flat latex paint tends to be more durable on exterior surfaces than alkyd finishes because the latex is permeable and allows the moisture content of wood to adjust rather than blister the paint. However, this is not so for gloss latex paints that have a permeability similar to alkyds.

Surface Preparation

The success of a coating is dependent on the surface preparation. The wood must be clean and free of dust, with a moisture content below 14%. For proper application and care, it must be applied at a temperature above 10°C. If the temperature is lower, full coverage is not achieved nor is a strong film, reducing adhesion and durability, and giving poor adhesion to the subsequent coat. This could result in peeling later. The 10°C temperature must last for at least 2 hours, so outdoor painting in winter or early spring will not give good results.

It's important not to delay painting new wood as weathering of new surfaces (even 2 - 3 months) can decrease the life of a coating by 50% due to damage of the cell structure. This is reflected by the grey patina weathered wood takes on. It can seriously affect adhesion of paint and must be removed by sanding before priming takes place. Painting siding is best before it is installed, or if a painted surface is desired primers should be applied to new wood as quickly as possible after installation.

The durability of exterior coatings is dependent on the ability of the coating to permit the movement of moisture (and in so doing avoid blistering) and on its ability to exclude the ultra-violet portion of sunlight that causes it to deteriorate.

Exterior finish coats are available in alkyd and latex products. Alkyd paints perform better than latex on doors and trim while latex paints have

better gloss and colour retention on siding.

Primers

Primers are designed to provide adhesion through controlled penetrations. They are used as a first coat on new exterior wood surfaces to ensure adhesion between wood and topcoats. Primers are available in alkyd or latex formulations to condition new wood to accept the finish coats.

Guidelines for Coatings

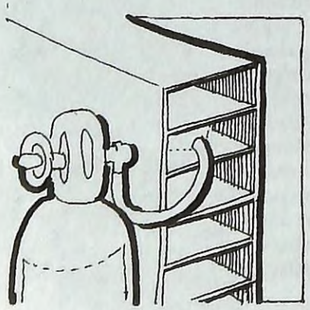
General

- Moisture content of wood should be below 12 to 14%.
- Surfaces must be clean and dry to ensure proper adhesion.
- Knots and pitch streaks should be treated with a knot sealer or shellac before the finish is applied to prevent the wood resins from bleeding through the topcoat.
- Recoating: Alkyds can be placed over top of latex coatings. Latex does not adhere well to an alkyd surface, especially in a damp environment and if the alkyd is glossy. However, a flat latex will perform adequately over a flat alkyd.

Exterior

- Generally, the lowest density softwoods, such as cedar, hold finishes best.
- Prefinished wood products with factory applied finishes are available. The advantages are quality control, controlled application conditions, and long service life of the product.
- For new wood surfaces, use an exterior wood primer in alkyd or latex before the finish coat.
- CCA pressure treated lumber must be permitted to season after the application of water borne preservative, before coating with alkyd or latex products.
- Do not use latex stains on horizontal surfaces such as decks. Latex on deck surfaces do not penetrate and the stain will wear through very quickly. Use semi-transparent alkyd stain to penetrate the wood and let the wood show through.
- Stain is superior to paint for fencing because there is so much exposed end grain which acquires and loses water readily.
- For vertical surfaces, solid hide latex stain will last longer than solid hide alkyd stain. It will not last as long as paint that provides a heavier layer.

Insulation of the Future?



To maintain thermal comfort and reduce energy use, buildings need good insulating materials. So how does an insulation product with an R-value of 13 per inch sound? That's R45 in a 2 x 4 stud wall!

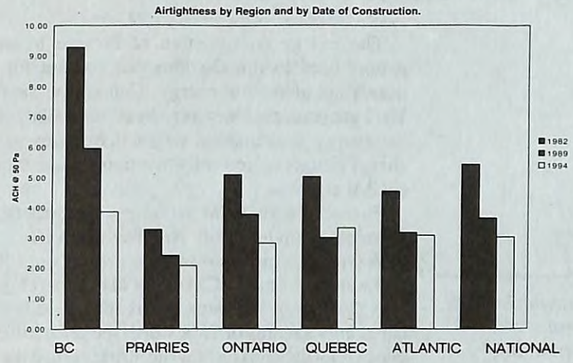
The Building Technologies Program at the Lawrence Berkeley National Laboratory in California has been working on advanced insulation systems primarily for refrigerator doors. It has been looking at a system of sealed plastic bags with a box-like shape that enclose a bonded honeycomb baffle made of thin metallized low-emissivity films and a low-conductivity gas. (Argon and krypton are the gases are used.). The films have a low diffusion to gas flow, so they will retain the panel's gas fill. Because they are gas filled, the panels are flexible but self supporting.

No manufacturer makes this product yet; it's still at the prototype stage. However, it is estimated that argon-filled, 3.5-inch- (89 mm) thick panels might cost about $0.69/ft² to manufacture.

Initial uses will likely be in manufactured housing and panelized building systems, where there is optimum control on design and dimensions.

This is not the type of product one uses a knife on the job to trim to fit!

Air Tightness of Houses



The trend has been to build increasingly more airtight homes. It started as homeowners began to expect better quality construction, and started to use new products, especially panelized materials like plywood, drywall and OSB. More emphasis was placed on air sealing as more attention was paid to energy conservation in the 1970's. Depending on the size and location of a house, uncontrolled air leakage alone can account for 30% or more of a home's heat loss.

There are sound technical reasons for airtight construction that go beyond energy conservation - air leakage is the principal contributor to moisture induced problems in construction. Of course, air sealed homes are draft free homes, which means greater resident comfort. Home owners today will not put up with drafty homes.

Air sealing began to be seriously addressed when the R-2000 Program stimulated the development and widespread use of a means for measuring the airtightness. From its beginning the program set a standard for airtightness (1.5 air changes per hour [ACH] at 50 Pascals) and required each house to be tested. The standard means houses that are exceptionally tight. At the same time, mechanical ventilation was introduced to deal with concerns for indoor air quality, which exist even in conventional homes.

Several surveys of conventional market houses over the years, in all parts of Canada, show a consistent trend to tighter houses. Data for 172 houses built in 1994 are preliminary, but are likely representative of current construction practices.

In 1982, the mean airtightness of Canadian houses was 5.4 ACH @ 50 Pa. This ranged from a high of 9.3 ACH in British Columbia houses (which also represents the mildest climate area) to a low of 3.3 ACH on the Prairies (the coldest climate area). In 1989, the national mean was down to 3.6 and in 1994 it was 3.0. BC shows the most significant improvement, as the airtightness goes down to 5.9 ACH in 1989 and 3.8 in 1994.

Other regional changes are less significant due to more limited sample sizes, but are interesting and follow the same trends. Ontario's numbers drop from 3.7 ACH @ 50 Pa in 1989 to 2.8 in 1994. This may reflect training under the New Home Warranty Program and the 1993 Ontario Building Code changes. The Prairies remain the most airtight region, while Quebec and Atlantic Canada did not show significant changes.

While specific numbers may vary from region to region, there is also a range within each region. It is interesting that the tightest houses tested in 1994 in all regions (all conventional, market houses) were below the 1.5 ACH benchmark set by the R-2000 Program. Even the leakiest houses, at 8.7, were much tighter than in 1982 when the leakiest were tested at 12.0 ACH.

The most important point to recognize is that at about 4 ACH @ 50 Pa. the natural air infiltration is reduced to the point that indoor air quality can be severely compromised unless mechanical ventilation is introduced, which is why codes now call for mechanical ventilation. It also has a bearing on all other systems in the house, especially open combustion appliances.

Comparing an R-2000 house to an average house is interesting. Historically, R-2000 houses have averaged 1.1 ACH @ 50 Pa.

Energy Efficient Furnaces

The energy consumption of furnace blower motors used to run the fans can account for a significant amount of energy. That is why the R-2000 program provides a credit of 300 kWh/yr to the energy consumption target if furnaces with energy efficient electronicaly commutated motors (ECM) are used.

Furnaces with ECM motors can represent a premium of up to $1000. Are they worth it?

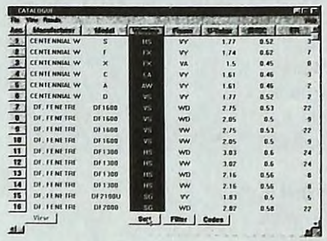
A typical furnace blower may draw about 400-500 watts, while the ECM motor may, on average, only draw about 100 watts. Is this apparent electrical energy savings of 75% worth the price difference? A lot depends on how the furnace is to be run. If the furnace is run simply on a demand cycle (i.e., turned on only when heat is called for) the number of hours the furnace will run may be 1500-2000 hours per year, so the savings are modest - maybe $40-50 per year.

However, if the furnace fan is run continuously, as it will be if it is used to distribute ventilation air and perform air filtration, then the picture changes totally. There are 8760 hours in a year, so even if the furnace is shut down for the summer, the run time may still be 6000 hours, and the savings increase to $150 or more per year. The incremental cost suddenly becomes much more attractive.

The argument in favour of the ECM motors becomes stronger if summer cooling is a consideration. Because these motors run much cooler, they don't contribute heat the air conditioner must remove besides the heat in the house, so the efficiency of the air-conditioning system is increased.

Furnaces with ECM or equivalent motors:
Bryant plus 90i
Carrier MPV 80
Armstrong GU95
Lennox Pulse 21V

Window Catalogue



Have you had trouble comparing windows from different manufacturers?

Performance of windows is not a simple element to describe and model. Manufacturers don't make life easier, each quite naturally making a pitch in favour of its own product. Inevitably the presentations are difficult to compare.

Help may be at hand.

A computerized catalogue (**Catalogue**) of window products is being developed. It will contain listings of windows and doors, including all products certified under the Canadian Window and Door Manufacturers' Association (CWDMA) program.

As a computerized directory, it will make it easy to search and sort performance data, and to select optimum windows and doors for houses and buildings. It should simplify compliance with the National Energy Code and R-2000.

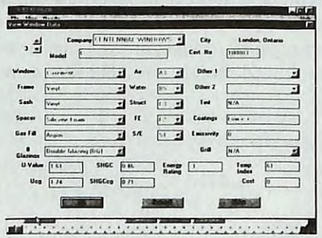
The catalogue does three functions: filter, sort and compare. Windows can be "filtered" according to the desired characteristic (e.g., by operator type, frame material). The resulting list can then be sorted by characteristic (e.g., ER value, U-value).

Finally, the user can view and compare the details of those windows of interest.

Catalogue is a WINDOWS 3.1/95 program to help consumers and builders select windows and doors. It is being developed by Natural Resources Canada with Enermodal Engineering Limited.

Enermodal is currently developing a datafile of window and door products sold in Canada. This datafile will be distributed with the release of Version 1.0 of Catalogue in early 1997. There is an annual fee for each manufacturer to be included in the datafile of products to cover the cost of entering and distributing the data.

Catalogue will be distributed free-of-charge to builders and designers. It is seen as an electronic version of standard product catalogues.



For information:
Enermodal Engineering Limited
650 Riverbend Drive,
Kitchener, ON N2K 3S2
Tel: (519) 743-8777
Fax: (519) 743-8778
e-mail:
frame@enermodal.com
Internet:
www.enermodal com

Prefab Heat Traps

Most homes have storage-type water heaters. However, hot water is only used for a relatively short period each day, so for most of the day hot water is not being used. However, heat continues to rise and escape from the water heater piping. The minimum one should do is insulate both the hot and cold water lines within two metres of the tank and consider installing a heat trap.

A heat trap prevents thermal currents produced by rising, less dense hot water. It's a piece of curved copper tubing that fits onto the pipe at the top of the heater to prevent hot water from rising through the pipe when no one is running hot water. (The proposed National Energy Code requires heat traps). Heat traps provide a measurable benefit. The US Department of Energy estimates that a pair of heat traps can save $19 a year on an electric water heater ($.08/kWh) and $7 a year on a gas heater ($.62 per ccf).

Temptec Energy Efficient Products Inc. in Tecumseh, Ontario is now manufacturing a prefab one pipe copper unit, available for both retrofit and new construction. The units include drainable taps. At a list price of $6.90 to $10.95, it's a cost-effective component with quick payback for the homeowner.

Information:
Temptec Energy Efficient Products Inc.
13300 Tecumseh Rd. East, Suite 348
Tecumseh, ON N8N 4R8
Tel: (519) 979-1686 or 1-800-230-9116
Fax: (519) 979-1695

Foundation Drainage System

How would you like to reduce foundation and site work by doing footings and perimeter drainage in a single step? .

Form-a-Drain by CertainTeed is a system for forming foundation footings and draining foundations. It is also useful for evacuating radon in those areas where radon is an issue. Form-a-Drain is a PVC drainage tube sized to match standard lumber dimensions (2¼" x 4", 2¼" x 6" and 2¼" x 8") in 12 foot lengths. A comprehensive line of couplings, corners, drain outlets, and accessories is available for constructing a complete forming, draining, and venting system.

Form-a-Drain Drainage Tubing complies with the performance requirements of standards for Plastic Drain and Sewer Pipe and Fittings, and Corrugated Plastic Drainage Tubing.

The system has been available in the U.S. for a couple of years, and is now being distributed in Western Canada through contractor lumber yards.

Pricing is still being determined, but it should be about $1.25 - $1.75 per lineal foot depending on the design.

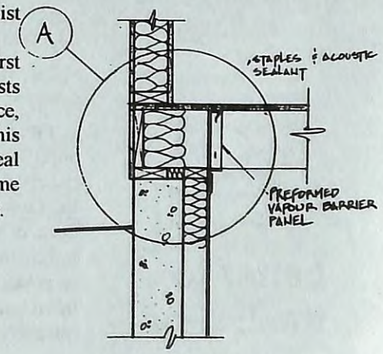
Information:
M & R Distributors
Tel.: (604) 936-1323
Fax: (604) 936-1939

Floor Joist Vapour Barriers

Achieving an effective air/vapour barrier between the ends of floor joists at the exterior walls of wood frame construction is difficult because the materials must be fitted between the joists. Vapour-Form Inc. has developed a new preformed vapour barrier panel that offers a quicker, more efficient method of applying vapour barrier protection to the joist headers.

The preformed vapour barrier panel is vacuum formed from a flexible 17-mil polyethylene material molded to fit the contours of floor joists, be they dimensional lumber or a truss joist system. The panels will be available for a variety of joist depths and spacing.

The panels are simply installed by first applying a bead of acoustic sealant to joists and subfloor, sliding the panel into place, then securing it with a few staples. This system provides a perfect air/vapour seal and can be installed in a fraction of the time it presently takes to compete the process.



For information:
Vapour-Form Inc.Winnipeg, MB
Tel.: 1-204-257-8076
Fax: 1-204-257-8075

Technical Research Committee News

Canadian Home Builders' Association

The Technical Research Committee (TRC) is the industry's forum for the exchange of information on research and development in the housing sector.

Canadian Home Builders' Association, Suite 200, 150 Laurier Ave. West, Ottawa, Ont. K1P 5J4
Tel: (613) 230-3060
Fax: (613) 232-8214

Building Codes

Work is continuing to draft an objective-based building code. The purpose of objective-based codes is to make regulations as flexible as possible. In this type of code, the requirements merely state the intent of the regulation. However, the move to objective-based codes has raised concerns about the form the code will take, and how easy they will be to use and administer.

Objective-based regulations generally require a high level of technical understanding and competence that may not actually exist in practice. Objective-based codes should mean very little change in practice. Although the code will state the intent of a requirement, a prescriptive text, such as the current code, will remain in place but as an example of good practice that conforms to the objectives of the code.

In other words, if you have a hard time dealing with the seemingly vague statement of principle, the current code language can be used as examples of how it should be handled.

On the other hand, if a new product or technology is not explicitly noted in the current version of the code, it will be much easier to use, as the building official will not be able to fall back to a given piece of text to use as an excuse not to allow it.

Home Owner Manual

We reported last issue on the development of a generic home owner manual for builders to use. The contract has been let, and work is now underway. The consulting team will be relying on ideas from a consumer focus group to spell out what kinds of information, and in what format, a homeowner needs. A second advisory group, with representation from the Warranty programs, builders, and house inspectors will provide information on practical aspects of the manual. The completion date for this work is still in mid 1997.

Defective Plastic Furnace Vents

We've reported in the past year on the confusion created in Ontario with the mandatory replacement of selected plastic vents for mid-efficiency furnaces. A class action lawsuit against the manufacturers has now been launched. For details, contact the lawyers: Siskind, Cromarty, Ivey & Dowler in London, ON.

Tel: 1-519-672-2121 or 1-800-461-6166
Fax 1-519-672-3093

Contaminated Sites: CHBA Position Paper

The CHBA position paper on government policies, procedures and criteria for clean up of contaminated sites has been revised. Copies are available from the TRC.

Bob Sloat, Director of Technical Research, Moves On

Technical research activities at CHBA are extensive, covering a wide range of technical issues as can be seen in the TRC News. This group is unique in that it brings together scientific researchers, industry and hands-on practitioners around a single table to review and discuss current and long term issues affecting the housing industry. It is the work of groups such as the TRC that keeps the Canadian housing industry a world leader. The TRC is also influential in setting the agenda for research, education, and code and standards development.

For the past 8 years, the technical research activities of the association have been overseen by Bob Sloat. Bob has decided it is time to move on. He is returning to his Alberta homebuilding roots effective December 1996.

Letter to the Editor

Sir,

I read with interest the item on Plywood Standards (Solplan Review, September 1996). Although the article was not attributed to Peter Metcalfe of the Canadian Plywood Association, I expect that most of the information came from the recent information releases developed by Peter in his role of promoting COFI plywood. Unfortunately the information releases leave out much of the material that is necessary to compare COFI plywood to plywood meeting CSA 0325. I would like to comment based on my 10 years in the plywood industry and as the former Chairman of the COFI Plywood Quality Control Committee.

At present COFI or Canadian plywood is manufactured to either of two product standards CSA 0121 "Douglas Fir Plywood" or CSA 0151 "Canadian Softwood Plywood". As product standards, they set out in general terms how the panels are to be manufactured and are specific to the veneer grades, allowable species, minimum number of plies for each thickness, workmanship, panel grades and bond performance. For unsanded Douglas fir sheathing plywood, faces and backs are Douglas fir while the inner plies can be a wide range of coniferous species including Douglas fir. For unsanded Canadian softwood sheathing plywood, faces and backs are coniferous species but inner plies can include both coniferous and hardwood species such as aspen and poplar.

The select or "B" and the standard or "C" grade veneers used in the sheathing grades also allow a wide range of knots, knot holes or other surface imperfections. Finally, the definition of Exterior Bond is "a bond that is unaffected by exposure to extreme conditions of moisture and temperature". There is no mention of "exterior type" only that the "bond type" is exterior. There is also no mention in these standards as to strength, stiffness, deflection under load, or fastener requirement which are performance requirements. A requirement for a third party quality assurance is also not included. However since 1974, COFI has had a certified quality assurance program.

Plywood manufactured to the performance standard CSA 0325 "Construction Sheathing" is commonly called "CDX" grade with "C" faces, "D" veneer backs and exterior type bonds. It must meet the same bond durability tests as plywood manufactured to the product standards. If the veneers used contain defects greater than those allowed in "C" veneer in the Canadian product standards, a further bond test called the radial probe test is required for certification. CSA 0325 panels must also meet specific performance requirements for linear expansion, thickness swell, concentrated static and impact loads, uniform distributed loads and fastener holding. The maximum deflection under concentrated load, impact load and uniform load sets the "panel mark" or "span rating". CSA 0325 requires third party quality assurance. There are no specified thicknesses for the span rating, however, business economics dictate that the panel will bemanufactured as close to the minimum thickness as possible, i.e. it is unlikely that a 1F16 panel would have the thickness range of 13 to 17 mm.

John Lowood
President, Structural Board Association
Willowdale, ON

Home Based Work: Design Implications

Increasingly, many Canadians do some or all their work from home. According to CMHC research, this means many have had to do renovations to adapt their homes to create suitable work spaces. This offers an opportunity for renovators to consider a new market niche.

The CMHC study gives a detailed profile of Canadian home-based workers, the pros and cons of working at home, and explores the implications for housing design and community planning.

Many home workers are very satisfied and want to continue working at home for the long term. At the same time, they want more storage and work space. A downside to working at home is the difficulty in separating work and family life, and the lost social interaction of the workplace.

There are several differences between teleworkers and home-based entrepreneurs. Teleworkers are more inclined to work in a space already designated for other use (ie a bedroom) while home-based entrepreneurs tend to have a specific work space separate from other areas of the home.

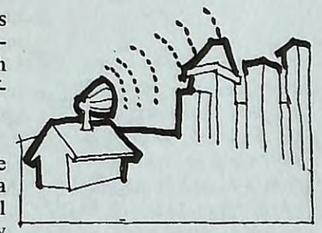
While about 27% have considered moving to a more suitable house or location, few have done so. A majority suggested they undertook or wanted to undertake renovations such as changing lighting, erecting new walls, finishing an existing room, or painting walls.

As often happens, municipal regulations are behind the times, often being too restrictive, hampering home-based work although most home workers don't do work that affects the neighbourhood.

Equipment used

Most of the teleworkers, and many the self-employed, have a computer. Most have a telephone answering machine or voice mail and some have a photocopier. They regularly use a fax machine, and a sizable number are connected to e-mail and the Internet. This reliance on broadband communications has implications for the wiring of such homes. Over half the homes surveyed had too few phone lines. Other pieces of equipment or large tools commonly found in home work spaces include office furniture, electronic equipment, and less commonly, power equipment for processing and manufacturing goods and providing services.

For teleworkers, there is a significant reduction in automobile travel because they can avoid commuting a few days a week. However, there was not a similar reduction for home-based entrepreneurs.



Planning for Telework and Home-Based Employment: a Canadian Survey on Integrating Work into Residential Environments. By Penny Gurstein of the Centre for Human Settlements at the University of British Columbia.
$ 12.99 plus GST
Tel: 1-800-668-2642

1997 Ontario Building Code Changes

Nearly 650 proposed amendments to the Ontario Building Code (OBC) have been issued for comment.

The philosophy behind the 1997 edition of the OBC is based on principles established during the first phase of consultation, laid out in "Back to Basics: A Consultation Paper on the Focus of the Ontario Building Code."

Four principles have been adopted for the building code. The intent is to return it to its original focus on health, safety and accessibility. The stated principles are:

1 - The OBC will focus primarily on setting standards for the protection of consumers in areas that address health, safety and accessibility.

2 - Substantive changes to OBC provisions will be justified based on cost-effectiveness. The intent is that costs to consumers of Code requirements should be more than offset by the benefits of these provisions to consumers over a reasonable period.

While widely supported, there is no widespread agreement on the methodology or timeframe to be used when assessing cost effectiveness. Unfortunately, some items that might be cost effective in the short term have much higher costs when considered over the long term of the building.

3 - The impact on construction costs, especially residential, will be a critical factor in determining amendments. This is meant to ensure that those provisions that could have a significant impact on construction costs should be the subject of rigorous scrutiny to determine whether they are both essential and cost-effective.

4 - Ontario recognizes the benefit of having similar building regulations across Canada, and will harmonize with the National Code as much as possible, except where this conflicts with other provincial goals.

Interested persons have until December 20, 1996 to submit comments on the proposals. The new 1997 Code is expected to be released in the fall of 1997, to take effect March 1, 1998.

Code Development Unit,
Housing Development & Building Branch
Ministry of Municipal Affairs
777 Bay St., 2nd Floor,
Toronto, ON
M5G 2E5
Tel.: 416-585-6666
Fax: 416-585-4029

Significant Proposed Code Changes

Energy Conservation

Present energy conservation standards will be removed. The Ministry believes each home buyer should be allowed to choose the energy conservation level they wish above a minimum standard., so the following provisions for energy efficiency have been removed from the OBC and will be promoted through non-regulatory means:

- ASHRAE 90.1 energy conservation standards for large residential and non-residential buildings; and,
- higher above-grade insulation requirements for houses (added to the OBC in 1990) including higher standards for homes with electrical heating, and houses in Northern Ontario.

In this age of government cost cutting, it is not clear how the message for energy efficient standards will be promoted.

While energy conservation measures are removed from the Building Code, it is proposed that the level of energy conservation of the building be shown through a mandatory labelling program. The design of the label is not defined, but the commentary suggests it will identify the insulation levels for roof/ceiling, walls, above grade, foundation walls, and also type of fuel and year of construction.

This change makes the big assumption that consumers are as knowledgeable as builders and designers and can understand the technical details, and that they also have the clout to change a builders' specifications. In reality, only the custom home purchaser has the power to make changes. By definition, a spec built home is presented as a finished package. Houses are not portable goods a purchaser can move around like an appliance, so in fact home purchasers are often at the mercy of the builder putting the product on the market.

The new minimum insulation levels will be		
ceiling	RSI 5.4	*(R 31)*
vaulted ceiling	RSI 3.52	*(R 20)*
above grade wall	RSI 2.11	*(R 12)*
basement walls	RSI 1.41	*(R 8)*
exposed floor	RSI 4.4	*(R 25)*
heated slab on grade	RSI 1.76	*(R 10)*
unheated slab on grade	RSI 1.41	*(R 8)*

Barrier Free Design

Improvements are proposed to existing OBC barrier-free design requirements. These include:

- increased number of entrances required to be constructed as barrier-free;
- increased area of building required to be barrier-free;
- width of doors, ramps, etc, increased to match the NBC requirements
- warning strips and improved escalator design to benefit the blind.

Sprinklers

It is proposed to expand current standards for mandatory sprinklers where the need for higher safety standards is more acute, to include: care facilities; hospitals; schools; and all other institutional, commercial and industrial buildings.

A new classification for care homes will be added so that standards may be set for buildings that are somewhere between institutional and residential use. This change responds to a jury recommendation from the inquest into the Meadowcroft retirement home fire last year.

Small Multi-Unit Buildings

To reduce construction costs and increase design flexibility in small apartment buildings (up to five storeys, 400 sq. metres per floor), changes are proposed that will allow alternative approaches to achieving safety goals, including a single exit stair and relaxed stair and corridor layouts if the building is sprinklered.

Minimum Room and Space Dimensions

The requirements for minimum room dimensions are proposed to be relaxed to allow for more design flexibility and potentially reduce costs, but minimum area requirements are being retained. (The 1995 NBC has dropped minimum dimensions and area requirements).

Heat Recovery Ventilators (HRVs)

Currently, HRVs are required in all houses built with electrical space heating. It is proposed that the OBC allow up to 10% of heating to be electric before an HRV is required, adding more flexibility and reducing costs. HRVs will also no longer be required in houses with forced air electric furnaces.

Live/Work

Live/work spaces are becoming increasingly popular. However, current standards for combining these uses in one suite can be onerous. A proposed set of changes will better accommodate the creation of live/work space, reduce compliance costs and increase design flexibility.

Radon Control

To provide increased protection from radon and harmonize with the NBC, changes are proposed to the OBC that will require homes to be constructed with sealed basements or a vent pipe for future remediation. This will add minimal construction costs.

Energy and Environmental Impact of Wall-insulation

A Swedish study evaluated additional exterior wall insulation for a multifamily building. The analysis took a life-cycle assessment approach. The results show that the embodied energy content of wall insulation materials (the energy needed to manufacture the materials, transport, build and demolish) has a small pollutant effect compared with the savings from reduced heating demand of the building during its life. The net cost is almost equal for a range of insulation thicknesses between 100 and 170 mm, so the environmental factors should favour use of the thicker insulation.

These results are similar to analyses done for the National Energy Code in Canada. Often the results show a range of possible options with equivalent life cycle costs. Unfortunately, the environmental impacts are not taken into account when decisions are made, and minimum short term solutions are chosen.

The Future of Energy Conservation Programs

by Elizabeth White.
Ms White is a pioneering low energy building designer and consultant (she was a driving force behind the original Advanced House in Brampton, ON).

Utilities have been a powerful force behind energy conservation programs, in large part helped by the credibility they enjoy with the public. Many of these programs were started as elements in the utilities demand-side management (DSM) programs. DSM programs were started when it was recognized that utility profits may be optimized by demand management, rather than merely building more generating capacity which has been the traditional approach.

A recent conference in Vancouver gives insights to future directions of DSM programs.

About 100 people from utility companies across North America attended this three-day conference hosted by B.C. Hydro. Topics covered included program design, energy codes and standards, envelope technology, building commissioning, indoor air quality, ground source heat pumps and program evaluation. The sombre mood of the delegates reflected the uncertain future of utility-led DSM programs, given the current trend of deregulation in an "oversupply" environment. Builders can forget about old-style cash-out programs for conservation measures as the utility companies struggle to maintain margins and customers in the face of competition from new energy retailers, similar to the shakedown experienced by the telephone companies when long distance competitors came on the scene a few years ago.

What will be the future role for the utilities now that DSM has fallen out of favour? Architect and contractor Kathleen Cruise was one of several speakers to suggest that the utilities become proactive in the advancement of performance contracts. Performance contracts differ from conventional contracts in that they have baseline requirements with incentives if actual performance exceeds the specified minimum. Anything that can be measured can be a baseline for performance; for example, capital cost per square foot, operations and maintenance (O & M) costs per sq. ft., energy use per sq. ft., temperature and humidity range, indoor air quality, etc.

Performance is measured over a specified time period, which can be as long as ten years, and contractual compensation is directly dependent on actual results. Ms Cruise suggested that the potential benefits of performance contracts for the owner include lower operating costs, lower life-cycle costs, more comfort and higher productivity, while the contractor and design professionals benefit from increased project control and are better able to deliver a quality facility. Plus, of course, they are rewarded for performance above expectations with larger fees. Rigorous building commissioning is an essential component of any performance contract and includes a commissioning methodology, inspections, static and dynamic testing, training of O & M personnel, and measurement and evaluation protocols.

Legislated energy codes got the nod of approval, but only if they were simple to understand and apply. Ecotope Inc. of Seattle reported on compliance with Oregon's Residential Energy Code, which has been in effect since 1992 and was designed to be fuel blind, primarily prescriptive, with no restrictions on window area, but with a maximum U-value of 0.4 for all windows. The code was designed to be very simple and easy to enforce, and to provide a minimum of opportunity for loopholes which might undermine the code's effectiveness and acceptance in the construction community. All requirements were summarized in a single table, which builders could refer to without reading the rest of the code. The result is that Oregon houses built under the energy code do deliver the intended energy performance. The major provisions, such as window performance and high-density insulation batts, have been integrated by the state's building industry as standard features. Although prescriptive compliance can be low for some items, energy savings are made in other areas of the house so that the overall energy performance meets code intentions.

Given the effort that many utility companies have made to develop effective energy-efficiency strategies for their customers, it is truly unfortunate that deregulation should occur at a time of temporary oversupply - which is predicted to last for about five years in most parts of North America. The future for conservation technologies and renewable energy would be much brighter if retail competition was introduced at a time of energy shortage and increasing prices. Then we would see lots of opportunities for energy service companies (ESCOs), "negawatt" generation and renewable energy applications. As it is, good energy-efficiency programs and experience are being lost for little gain - conference delegates told us to expect to pay less for power but a lot more for 'services', such as guaranteed non-interrupted supply!

Copies of the Proceedings of the Building for the Future, Fourth Energy-Efficient New Construction Conference Sept 30 - Oct 2, 1996, Vancouver may be obtained from ADM Associates Inc. 3239 Ramos Circle, Sacramento, CA 95827-2501, attention Marla Sullivan, Cost $45 U.S.

B.C. Building Standards Branch Closes

As part of the Government's financial restructuring, the B.C. Ministry of Municipal Affairs and Housing is being reorganized. The Building Standards Branch (BSB), the office responsible for the building code and technical services, such as code interpretations and appeals, is being shut down effective January 31, 1997.

While the BSB is being closed, there is still a statutory obligation for building regulations, so a Corporate Policy Branch that will include building codes and standards is to be set up. This will become a central Ministry policy branch that will include building regulations and housing and safety policy issues among other Ministry concerns. However, there will not be a separate stand alone office as such.

It's fine to establish regulations but, like any other human creation, they have to be managed and tweaked on an ongoing basis. Without the even limited technical support that has existed up to now, dealing satisfactorily with changes that have to be carried out from time to time will be impossible. If the current BC Building Code is kept, the regulations will, in effect, fragment into a profusion of local regulations.

The BSB is still identifying those issues and projects that will either be wound down or completed before the end of January. Some will carry on beyond this date, but much work being done by Branch staff will be ended almost immediately. This means that the current Building Code review process is in limbo. The only alternatives are to keep the current BC Building Code as is, or to adopt the 1995 National Building Code without changes.

The closure of the BSB at this time is of concern as the province is midway through a major public review examining the entire construction safety systems process. Considerable time and effort have already been put into the process by industry groups and volunteers. Closing the branch shuts down the entire process, thus losing the considerable effort that already has been made.

The policy decision to eliminate the BSB borders on the abdication of responsibility for building regulations which, in B.C. at this time of tremendous growth, is unwise. Without realistic administrative back up, the consequences for the building industry can be potentially tragic.

The sudden move, without consulting with the construction industry, raises questions about the competence of decision makers within the bureaucracy that came up with this scheme. BSB was a lean organization with a staff of only 8 people. The budget was so tight that two years ago, when significant code revisions were issued, there wasn't enough in the budget to pay for mailing them out to code users until the last moment.

Uniformity of code interpretation is important to provide a smoothly functioning and cost-effective industry. Local jurisdictions need back up support that only a provincial agency can offer.

BSB has had a limited role in this manner, but it was nevertheless providing a service in this area. Without a central agency, the de-facto development of local codes will start. In effect, this means differing regulations in different areas. Small communities away from metropolitan areas will suffer most, not having resources to fall back on when technical issues arise.

In the past year BSB had set up an Internet site, where all policy decisions, appeals, etc. were posted, thus making information quick to access. The Internet site was barely getting going but offered good prospects of providing a valuable service - it appears that is now "history".

Construction is one of the largest industries in B.C. There is no doubt on the part of any player that there is a need for a gatekeeper to administer basic building codes and regulations. Closing BSB before issues relating to administration of building regulatory issues have been clarified is a detrimental step for public safety. The impact on the construction industry has not been thought through.

The irony is that the industry may have brought this situation on itself, as members have been arguing for so long for less regulation. Now it seems they may be getting it after all.

B.C. Building Code - Oops!

Last issue, we mentioned the proposed change process for the current B.C. Building Code, and listed the wrong address for the Building Standards Branch. As it turns out, an address correction is not needed, as the branch is being closed in January.

1996 Reno-Demo Projects

The Reno-Demo program, sponsored by NRCan, CMHC and CHBA is meant to show healthy housing and energy-efficient building techniques and practices for home renovation. Competition winners, representing local home builders' associations across Canada, demonstrate the most popular renovation projects. Projects just completed, or underway include:

Ottawa-Carleton HBA (Ontario)

A whole-house renovation, including extensive interior and exterior renovations to a brick home on a stone foundation. The emphasis is on environmental responsibility, healthy indoor environment and energy efficiency. As so often happens, the scope of work grew as it was discovered the foundation was inadequate, so removing the existing foundation was necessary, and the crew had to go down 12 feet to find bearing.

Fraser Valley HBA (B.C.)

This project involved the renovation of two homes built in 1906. The focus of the work was on energy conservation, environmental awareness and waste management.

North Okanagan HBA (Vernon, B.C.)

This saw the renovation of two heritage homes, one a pioneer farm-house-style building, with no central heating and single-pane glass on the windows. The house was 75% gutted and stripped back to its original layers. A basement was added, and the interior completely redone, including walls, floors, plumbing and the kitchen. To make the project economically feasible, existing and salvaged materials were used.

Annapolis Valley HBA (Nova Scotia)

This project undertook five separate renovation projects. These included a 25-year-old house for which renovations will improve the building envelope, ventilation and heating system. A heritage property built in 1835 underwent extensive renovations and general repairs. Renovations and repair to a 50-year-old two and a half storey house included a complete kitchen replacement. A 25-year old house had a new kitchen and a central ventilation system installed. A five-year old (!) house had renovations including windows, added insulation, basement development and interior finishing.

L'Association provinciale des constructeurs d'habitations du Quebec (APCHQ) - Estrie

This project shows an example of creative building recycling. Renovations were done to a Sherbrooke building that contained residential and commercial space. It improved the two existing residential units and converted the light commercial space into two additional units.

Kitchener - Waterloo HBA (Ontario)

This project is linked to the city of Kitchener's effort to revitalize the downtown core. It is a whole-house renovation of an older house in the city centre.

Coming Events

January 15-16, 1997
10th Anniversary Ontario Builder Forum Toronto, ON
Tel 416-447-0077
Fax 416-443-9982

January 20-21, 1997
Enerhouse '97 Building a Better future in new homes and renovations
Dartmouth, N.S.
Tel.: 1-800-670-4636 or (902) 835-5600
Fax.: 1-902-424-7735

January 22, 1997 Halifax NS
January 24, 1997 St. John's NF
February 5, 1997 Thunder Bay, ON
Let's Clean the Air: an Indoor Air Quality Seminar by CMHC.
Tel.: 1-888-877-5567 (toll free)
or (613)-224-2962
Fax.: (613) 224-9685

February 9-12, 1997
1997 Annual CHBA National Conference Calgary, AB
Tel: 413-443-9023
Fax.: 416-391-2118

February 15, 1997
Housing Tech '97 CHBA-BC technical forum Vancouver, B.C.
Tel.: 1-800-933-6777 or 604-432-7112
Fax. 604-432-9038
Internet: www.chbabc.org

February 16, 1997
The Common Call Back CHBA-BC one day seminar with Jow Lstiburek
Vancouver, B.C.
Tel.: 1-800-933-6777 or 604-432-7112
Fax. 604-432-9038
Internet: www.chbabc.org

March 20-21, 1997
7th Conference on Building Science and Technology Toronto ON
A. McOrmond (905) 791-2761
or H. Doshi (416) 979-5000 ext 6502

June 5-7, 1997
IMPLEMENTING SUSTAINABLE ENERGY IN A CHANGING WORLD
The Solar Energy Society of Canada Inc. 1997 annual conference
Vancouver, BC
Tel: 613-523-0974
Fax: 613-736-8938
e-mail: solar@worldlink.ca

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